Fact Sheets

SRS

Saltstone

The Saltstone Facility safely treats and disposes of certain low-level liquid radioactive wastes produced and stored at the Savannah River Site.

Soluble salts, primarily sodium nitrate (similar to fertilizer), make up about 93 percent of the 37 million gallons of material in the radioactive waste storage tanks in the High Level Waste (HLW) storage tanks at the site. Pretreatment of this HLW will separate soluble salts from insoluble sludge to generate about 100-120 million gallons of salt solution. This salt solution will be treated to remove cesium and strontium. These two contaminants are sent to the Defense Waste Processing Facility, where they are combined with the sludge, turned into glass and poured into canisters.

Removal of the cesium and strontium converts the majority of the salt solution to low-activity waste containing less than 0.01 percent of the total radioactivity now present in the waste. This salt solution will be sent to the Saltstone Facility for immobilization with cement grout and disposal.

In addition to receiving low-level waste from the tank farms, Saltstone also receives a similar waste stream from the Effluent Treatment Facility, which is another facility that processes other waste from the tank farms as well as from the site's two chemical separation facilities.

After the waste is received at Saltstone, the salt solution is mixed with cement, fly ash and furnace slag to form a grout. The grout is then pumped into a large concrete vault divided into 12 sections (called cells); here, it cures into stable concrete (called "saltstone"). Each cell is 100 feet long, 100 feet wide and 25 feet tall. There is already one six-cell vault built, as well as one with 12 cells (each vault is partially full). All future vaults will contain 12 cells. After filling, the vault will be capped with clean concrete to isolate it from rain and weathering. Final closure of the area will consist of covering the vaults with a clay cap and backfilling with earth.

Extensive testing shows that any waste constituents leached from the saltstone will remain within Environmental Protection Agency drinking water standards. Wells near the edge of the disposal site are used to monitor groundwater to ensure that it meets standards established by the South Carolina Department of Health and Environmental Control.

Construction of the Saltstone Facility and the first two vaults was completed between February 1986 and July 1988 at a cost of $45 million. The Saltstone Facility started radioactive operations June 12, 1990, and to date has processed approximately 2.8 million gallons of low-activity waste. Currently, the Saltstone Facility is undergoing a restart process, in anticipation of supporting site initiatives to recover HLW tank storage space, which is becoming a premium on site. Restart is expected by Spring 2002.